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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,996	12/29/2000	James T. Theodoras II	M-9283 US	7693

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EXAMINER

NGUYEN, TUAN M

ART UNIT PAPER NUMBER

2828

DATE MAILED: 10/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/751,996

Applicant(s)

THEODORAS ET AL.

Examiner

Tuan M Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to claim 1, the claim is missing a monitoring and determining step for determining whether the system should be operated in the low power mode or the standard mode. Claim 1 recites a method for a thermo-electric cooler coupled to a **laser diode** and further the claim recites the low power mode maintain a **laser diode** at a temperature within a predetermined range of temperature. It is unclear that they are the same laser diode or different laser diode. The claim also recites the standard mode maintain **the laser diode** at a temperature that corresponds to a predetermined wavelength of light output from **the laser diode**, it is unclear that the laser diode is refer to the first a laser diode or to the second a laser diode. The claim also recites the laser diode configured to transmit signal in the low power mode and standard mode. It is unclear how to configure, which render the claim confusing, vague and indefinite.

Regarding to claim 9, the claim fails to provide the means for monitoring and determining the temperature/wavelength of the laser. Claim 1 also recites wherein the low power mode maintain the laser diode at a **temperature** within a predetermined range of temperature and the standard mode maintains the laser diode at a **temperature** the corresponds to a predetermined wavelength of light output from the laser diode, it is

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unclear the first **a temperature** and the second **a temperature** are the same temperature or different temperature, which render the claim confusing, vague and indefinite.

Regarding to claim 14, The claim fails to provide monitoring and determining steps determining whether the system should be operated in the first mode or the second mode. The claim recites wherein the thermo electric cooler is responsive to inputs from the temperature circuit, the input **identifying one** of at least a first mode and second mode, it is unclear statement. The claim also recites wherein **a choice of mode** is a **function of a performance requirement** it is unclear statement, which render the claim confusing, vague and indefinite.

Regarding to claim 23, The claim recites a method for providing thermo-electric cooled systems for operating a laser diode comprising operating a laser diode in one of a first mode and a second mode wherein the choice of mode is a function of a user defined power and performance ratio. The claim is insufficient steps to support the method of monitoring, switching from standard/low mode, and conforming a thermal cooler for controlling a laser. It is unclear “the choice of mode is a function of a user defined power and performance ratio” is the mental function or operation which render the claim confusing, vague and indefinite.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6-10 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Jang (US patent 5,521,375).

With respect to claims 1, 9 and 23, Jang discloses method and apparatus for controlling the output level of a second harmonic generator by temperature compensation comprising a thermo electric cooler (112), a laser diode (100), switch (612), note col. 1 line 37 to col. 5 line 67, see figs 1-8.

With respect to claim 6, Jang discloses the predetermined range of temperature is a range of temperature within which the laser diode has a user-defined power versus performance ratio, note col. 3.

With respect to claim 7, Jang discloses the predetermined range of temperatures is input by one of a user and a system generated source, note col. 3 line 30 to col. 7 line 5.

With respect to claims 8 and 10, Jang discloses the predetermined range of temperatures and the wavelength of light output from the laser diode, note col. 3 line 10 to col. 7 line 11.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 2-3 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang (US patent 5,521,375) in view of Abeles et al (US patent 6,014,237).

With respect to claims 2-3 and 11-12, Jang disclose all limitations as set forth in claim 1 except for the time division multiplexing (TDM) and the Dense Wavelength Division Multiplexing (DWDM). Whereas Abeles discloses the TDM and DWDM, note col.1 line 16 to col. 15 line 57. For the benefit of multiwavelength mode locked dense wavelength division multiplexed optical communication systems, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Jang with the time division multiplexing and the dense wavelength division multiplexing as taught or suggested by Abeles.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jang (US patent 5,521,375) in view of Masuda et al (US patent 5,303,250)

With respect to claim 4, Jang discloses all limitations as set forth in claim 1 except for the quasi-standard power mode. Whereas Masuda et al discloses the quasi-standard mode, note col. 6. For the benefit of laser light generating apparatus, it would

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have been obvious to one having ordinary skill in the art at the time the invention was made to provide Jang with the quasi-standard mode as taught or suggested by Masuda.

7. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang (US patent 5,521,375) in view of Tyrrell et al (US patent 5,185,736).

With respect to claims 5 and 13, Jang discloses all limitations as set forth in claim 1 except for the synchronous optical network. Whereas Tyrrell et al discloses the synchronous optical network, note col. 1 line 44 to col. 51 line 22. For the benefit of synchronous optical transmission system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Jang with the synchronous optical network as taught or suggested by Tyrrell.

8. Claims 14, 16, 18, 20, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang (US patent 5,521,375) in view of AuYeung et al (US patent 5,604,758).

With respect to claim 14, Jang discloses all limitations as set forth in claim 1 except for the temperature circuit. Whereas AuYeung discloses the temperature circuit (32), note col. 2 line 64 to col. 4 line 53, see fig 1. For the benefit of microprocessor controlled thermoelectric cooler and laser power controller, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Jang with the temperature circuit as taught or suggested by AuYeung.

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With respect to claim 16, AuYeung discloses the temperature circuit including a switch (82), note col. 3 line 39 to col. 4 line 10, see fig. 2.

With respect to claim 18, AuYeung discloses the feedback circuit (64), feedback path from the sensor (86 or 66) by the line (88 or 68), note col. 4 see figs 1-2.

With respect to claims 20 and 22, AuYeung discloses the laser drift, note cols. 1-2.

9. Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang (US patent 5,521,375) in view of AuYeung et al (US patent 5,604,758) further in view of Abeles et al (US patent 6,014,237).

With respect to claims 15 and 17, Jang and AuYeung disclose all limitations as set forth in the claims 14 except for the time division multiplexing (TDM) and the dense wavelength division multiplexing (DWDM). Whereas Abeles disclose the TDM and the DWDM note col.1 line 5 to col. 15 line 57. For the benefit of multiwavelength mode locked dense wavelength division multiplexed optical communication systems, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Jang with the time division multiplexing and the dense wavelength division multiplexing as taught or suggested by Abeles.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jang (US patent 5,521,375) in view of AuYeung et al (US patent 5,604,758) further in view of Tyrrell et al (US patent 5,185,736).

With respect to claim 19, Jang and AuYeung disclose all limitations as set forth in claim 14 except for the synchronous optical network. Whereas Tyrrell et al discloses

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the synchronous optical network, note col. 1 line 44 to col. 51 line 22. For the benefit of synchronous optical transmission system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Jang with the synchronous optical network as taught or suggested by Tyrrell.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jang (US patent 5,521,375) in view of AuYeung et al (US patent 5,604,758) further in view of Byer et al (US patent 4,809,291).

With respect to claim 21, Jang and AuYeung disclose all limitations as set forth in claim 14 except for the low power mode which is less than 5 watts. Whereas Byer et al discloses the threshold power was for operation at milliwatts, note col. 3. For the benefit of diode pumped laser and doubling to obtain blue light, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Jang with the power for operation of laser diode as taught or suggested by Byer.

12. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jang (US patent 5,521,375) in view of Abeles et al (US patent 6,014,237).

With respect to claims 25 and 25, Jang discloses all limitations as set forth in claim 1 except for the ratio of power, time division multiplexing and dense wavelength division multiplexing. Whereas Abeles discloses the ratio of power, time division multiplexing and dense wavelength division multiplexing, note col. 1 line 15 to col. 15 line 57. For the benefit of multiwavelength mode locked dense wavelength division multiplexed optical communication systems, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Jang with the time

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division multiplexing and the dense wavelength division multiplexing as taught or suggested by Abeles.

Citation Of The Pertinent References

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Spurr et al (US patent 5,966,394) discloses laser diode controller.

Communication Information

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247. The examiner can normally be reached on 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-5511 for regular communications and (703) 306-5511 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Paul Ip
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